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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,204	12/30/2003	Dae-Hun Cho	11038-170-999	1851
24341	7590	12/21/2005	EXAMINER	
MORGAN, LEWIS & BOCKIUS, LLP. 2 PALO ALTO SQUARE 3000 EL CAMINO REAL PALO ALTO, CA 94306			PRICE, CRAIG JAMES	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/749,204	CHO, DAE-HUN
	Examiner	Art Unit
	Craig Price	3753

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 14 November 2005.  
 2a) This action is **FINAL**.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-4 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-4 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 14 November 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### *Drawings*

1. The change to the drawing is accepted and the objection is removed.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Makino (US 4,282,896).

Regarding Claim 1, Makino discloses a check valve (V1), which comprises a pipe (1a,10,12) formed with an oil inlet (10) and oil outlet (12), a piston (3,15) (defined as being a solid cylinder (15) or disk that fits snugly into a larger cylinder and moves under fluid pressure) slidably installed in the pipe, a spring (21) pressuring the piston toward the oil inlet for closing an oil passage connecting the oil inlet and oil outlet (col. 3, 11. 23-54), wherein the spring (21) is an asymmetric compression spring as seen in Figure 4, wherein the asymmetric compression spring is a spring getting smaller in diameter toward one direction as seen in Figure 4. With respect to the claimed limitation "wherein

the asymmetric compression spring is designed to render the compression length change of the spring to be relatively large when low oil pressure is applied and slight when high oil pressure is applied", since, Makino discloses an asymmetric compression spring as per applicant's claimed invention recited in claim 2. Furthermore, the spring (21), is by definition asymmetric in that the turn of the coil of one side of the spring is not at the same location as the turn of the coil is from the opposite side, thereby being asymmetric or non-symmetric. Therefore, Makino's spring is capable of having a relatively large compression length change when low oil pressure is applied and slight when high oil pressure is applied in as much as the applicant's claimed invention. With regard to the preamble directed to a check valve for use in a diesel engine, a preamble to a claim is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self contained description of the structure not depending for completeness upon the introductory clause. See Kropa F. Robie, *supra* at 480. See also *Ex parte Mott*, 190 USPQ 31 1, 313 (PTO Bd. of App. 1975). Clearly, the pending claim 1 does not rely on the preamble for completeness.

Regarding claim 4, Makino depicts the claimed limitation, "wherein the diameter of the spring decreases toward one end", in Figure 4, the spring (21) has an outside diameter where the spring decreases toward an end.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makino (4,282,896) in view of Vose (41, 950).

Makino has taught all the features of the claimed invention except that the asymmetric compression spring is a spring getting smaller in wire thickness toward one direction. Vose shows a spring (A) in Figure 6, where the spring is getting smaller in wire thickness toward one direction (col. 2, Lns.19-41 and as seen in Figure 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Makino's spring to have the spring with the spring getting smaller in wire thickness toward one direction as taught by Vose in (col. 2, 11. 34-41), in order to allow the upper coils to be more elastic than the lower and heavier portion of the spring.

***Response to Arguments***

4. Applicant's arguments filed on November 14, 2005 have been fully considered but they are not persuasive.

In regards to your first argument,

"an asymmetric compression spring does not pressure a piston toward an oil Inlet in Makino". The spring (21) of Makino, is by definition, asymmetric, in that the turn of the coil of one side of the spring is not at the same location as the turn of the coil is from the opposite side, thereby being asymmetric or non-symmetric.

"The Examiner referred to poppet valve 3 as a piston." The poppet valve (3) of Makino is by definition a reciprocating piston in that, a piston is defined as being a solid cylinder (15) or disk that fits snugly into a larger cylinder and moves under fluid pressure.

In regards to your second argument,

"a spring does not pressure a piston for closing an oil passage in Makino. The instant application discloses that the spring ordinarily keeps the oil passage closed and that oil pressure must overcome the force of the spring to open it (paragraph (00121)."  
Makino discloses, "The oil then passes through the check valve V1 by forcing it open and is discharged through an outlet port 12", in (col. 3, Lns. 29-32).

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Price whose telephone number is (571) 272-2712. The examiner can normally be reached on 8AM - 5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Blau can be reached on (571) 272-4406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CP



December 15, 2005



STEPHEN BLAU  
PRIMARY EXAMINER

Application No. 10/749,204  
Attorney Docket No. 060945-0170  
REPLACEMENT SHEET



FIG.1

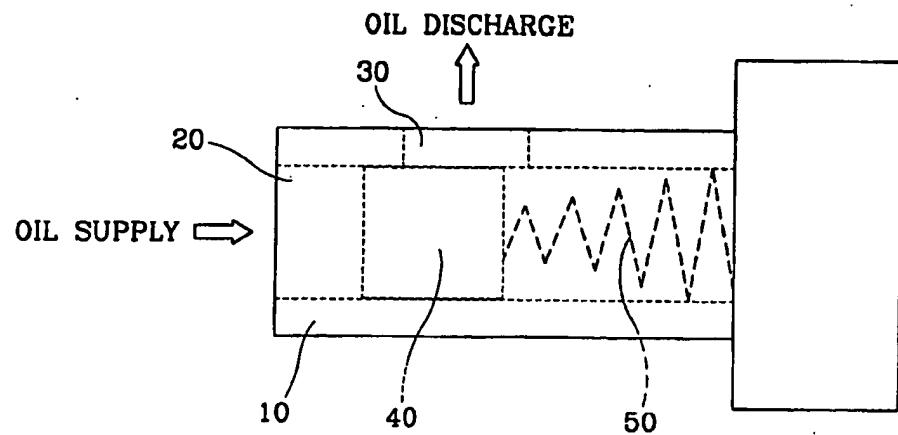
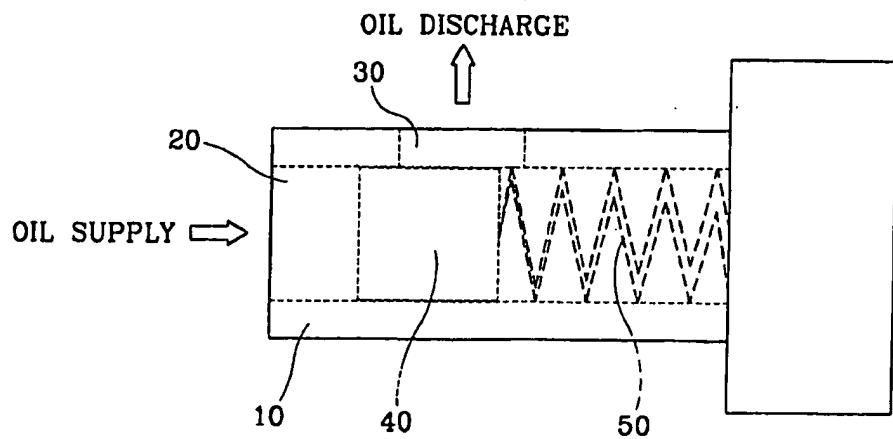


FIG.2



APPROVED Office 12/15/05